macdonald FARM journal

Aerial view of Macdonald College of McGill University

* SOIL — The basis of all life
* The farm of Allan D. Hammond

MAY, 1966

THE MACDONALD LASSIE

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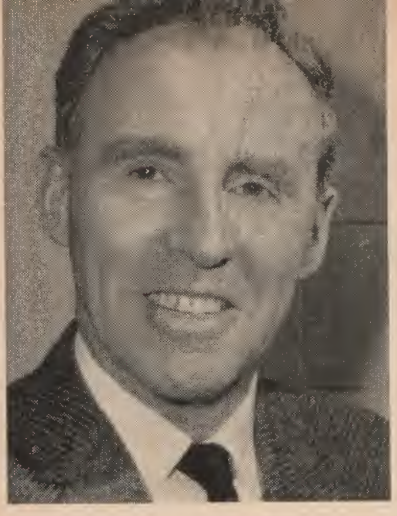
OUR COVER PHOTO: The land associated with the college consists of approximately 1600 acres (outlined) at the western end of the island of Montreal. The main campus is seen between the towns of St. Anne de Bellevue (top left) and Baie d'Urfé. The stock farm and agronomy plots lie between Highway 2 and the new Trans-Canada Highway. The area to the right is the 700 acres of the Morgan Arboretum, and the Provincial Seed Farm (120 acres) is bottom center.



INSIDE

THE EDITOR'S COLUMN

This Word "Agriculture"

Guest editorial by Peter Y. Hamilton

What does the word "Agriculture" mean to you?

If you are like most of those who read this Journal, you are involved in some way with agriculture. To you, "farming" and "agriculture" are no longer synonymous; farming is but one important aspect in a much wider and larger agriculture. You, who are part of it, will know that Agriculture now embraces the many industries that provide the unlimited power, fertility, chemicals and feed for the production of crops and livestock; that at the other end of the production line, industry again takes the raw products of the farm for processing, packaging and marketing. You will know also that our agricultural education and research centres, agricultural industry, and modern farming, have teamed up to provide the Canadian people with an abundance of the lowest-cost food in the world.

And Agriculture is not stopping there. In its newest meaning it goes beyond its traditional role of providing food and fiber, to the expanding field of resource and community development. Here agriculture provides land and livestock for recreation as well as food and fiber. Pastures are being turned into camping grounds; cattle barns converted for riding horses. To include such frivolous things as part of agriculture is hard for many of us to accept. Yet, with more and more time available for leisure, it may well be that providing recreation will become as important a contribution from agriculture as food and fiber. Yes, we who are in it know the meaning of agriculture has changed and that it will continue to change.

But what about the people who are not associated with agriculture? What does "agriculture" mean to them? Do they recognize the vast changes and wide scope of our new agriculture? Do they even recognize the science and business management involved on a modern farm?

The answers to these questions are all too obvious. We have not been successful in convincing even those who up-date our dictionaries of the changes in the meaning of this word. The dictionary is the authority to which the young people of this Nation turn for the meaning of words. Yet, according to the late editions of the dictionaries in our Library, Agriculture is still, "cultivation of the soil," "husbandry," "tillage." "In its broadest sense, farming, including horticulture and stock raising."

Does it matter whether these people know the modern meaning of Agriculture?

More than any other industry, Agriculture needs the understanding of those who are not part of it. The reasons are obvious. One of them is the pressing need for more people in Agriculture. Only about half enough trained personnel are available to fill the openings in Agriculture this year. We are told by employment specialists that within a decade we will need five times as many. If we are going to attract sufficient numbers to agriculture in the years ahead, we must see to it that more people know the new meaning of "Agriculture."

We know what must be done. We, in Agriculture are the ones that must do it. Let us share the responsibility and get on with the job.

Peter Hamilton

by B. P. Warkentin

SOIL - THE BASIS OF ALL LIFE

This article was first published in "The Canadian Mennonite", March 1966. Prof. B. P. Warkentin is chairman of the Department of Soil Science, Macdonald College of McGill University, and president, Canadian Society of Soil Science.

We must preserve it for our children and their children

"Between the farmer and prosperity stands his land." My father quoted this to me when I was growing up on the farm in southwestern Manitoba. I began to learn then, and have continued to learn, about the differences among soils and how these differences show up in growth of crops. And this importance of the soil to man's livelihood is true not only for the farmer, but also for the nation.

Soil is indeed the basis of all life. The thin layer of material on the surface of the earth supports the plants which provide food directly or which provide feed for animals which then provide man's food. In earlier times, man was satisfied to get what production he could from a superficial use of the soil. When the soil no longer produced in sufficient amounts, he moved on to other areas. This is no longer possible. With the increase in world population, it will become much more important in the future to learn to understand and to manage our soils. Even though our populations will be regulated, which we must learn to do, we will have to husband our soil resources to provide food for man.

We are dominantly an agricultural people, and we are very much aware of the differences among soils. In our wanderings we have had to adapt farming practices to the soil and climate of the new situation. We have done so successfully. A farmer recognizes differences among soils : differences in colour, stoniness, stickiness, and differences in the kinds of plants which grow on different soils. We see, when we dig into the soil, that these properties of soils change with depth. What then is this material with which we live in intimate contact, and which is so important to us ?

A Living Body

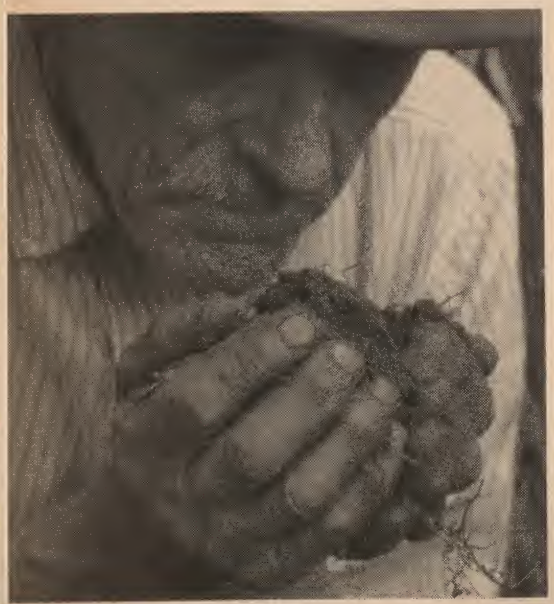
It was the Russian soil scientist Vasilii Vasilievich Dokuchaev, working in the

late 1800's for the Zemstvo of Nizhni-Novgorod, who gave us the concept of the soil as a living body, as something which had to be studied as a natural body. Across the vast Russian landscape he saw how soils changed as climate and vegetation changed, and how soils changed when the rocks on which they were formed were different. His ideas on how soils developed, and how they were to be classified, were the beginings of the presently used ideas in classification of soils. Many of the terms now used for soils: chernozem, solonetz, podzol, are Russian descriptive terms.

We now recognize five factors which are important in changing the rocks lying on the earth's surface into soil which will support intensive plant growth. These factors are climate, vegetation, parent material, topography and time. Beginning with a particular type of crushed rock — the parent material — under a certain topography which determines the rate at which the soil will be formed, the climate and vegetation work, in time, to make the natural body — soil. It is a living body because of the life within it — the micro-organisms, the bacteria, fungi and small animals, as well as the plant roots. It is also a living body because it is always changing. These changes are very slow, and we do not see the change during a lifetime, except under special conditions. In some tropical areas it is possible to watch soil develop on volcanic material; to watch plants gradually become established and the distinctive soil properties become visible.

How Soils Form

The soils in the wheat growing areas of the Prairie Provinces were developed on material pushed around by the ice of the last glaciers, and deposited either from ice or from water. This material was changed, by the grass vegetation growing on it, and under the climatic conditions of the prairies, into the deep, dark-colored soils which are now found. The influence of topography is seen where the dark layers are deeper on the slopes and at the bottom of the hills than on the top.



The kind of development which has produced a soil can be inferred from a study of the layers or horizons which make up the soil. The top layer is usually darker because it contains organic matter, decaying plants and most of the soil animals. Below that will be a layer from which salts have been washed out. Sometimes layers of lime or salt accumulation occur.

Soil Surveys

In talking about soil as the basis for life, we are talking about soil as a material in which plants grow. We want to know how good a soil is for growing certain crops. This information is obtained by soil surveys, both on a broad scale and on a single farm basis. The soil survey report describes the soils which occur, and shows on a map where they occur.

The factors determining suitability of soil for a particular type of agriculture are usually the physical factors such as hilliness, stoniness and size of particles present — whether sand, loam or clay. These physical factors cannot easily be changed. Many of these factors are obvious on examination of the soil, and farmers distinguished among soils on the basis of these factors long before scientific studies of soils were begun. Some physical factors can be changed, for example, the wetness of a soil is changed by drainage. Changing physical properties is usually very expensive, and is not undertaken except for high-value crops. Another example of changing physical properties would be growing of grass in a rotation to put organic matter into the soil to make it less sticky and easier to cultivate.

Fertilizers

Other soil factors are more easily changed, for example, the chemical properties which determine soil fertility. Fertilizer is now widely used, and on some soils it makes the difference between getting a crop and crop failure. On some other soils, fertilizer does not have to be used. The Canadian Prairies are a region where small amounts of fertilizer are only recently being used for wheat. As cropping continues, and becomes more intensive, more fertilizer will be used.

Different soils require different amounts and different kinds of fertilizer. Soils can be tested for the amounts of nitrogen, phosphorus and potassium present, and for the amount of lime required. The amounts that are lacking, and which should be added, are then calculated. Fertilizer recommandations for different crops and different soils are drawn up from this information. Soil testing for fertilizer requirement is a service which is available almost everywhere in Canada and is widely used by farmers.

Growing our food is the most important use we make of soils but we should keep in mind the other uses. The engineer uses soils to build with and to build on — earth dams to control water and roads for transportation. The properties of soil must be known to the engineer when he puts roads or buildings on different soils.

The Broader Cycle

The soil also plays a role in the broader cycle of life and death — it is at the soil surface and in the top layers of soil where decay of plant and animal material occurs. This decay is necessary because the nutrients, especially nitrogen and carbon, must be released to be used again by the next generation. If this decay did not occur, the earth's surface would long ago have become uninhabitable. It would be cluttered with dead plants and animals, and the nitrogen and carbon would be trapped in it. The animals and the micro-organisms in the soil carry out these vital decay processes.

The soil is a natural resource which we use, but which we must not consume. It must be preserved for our children and their children. We cannot afford to squander this resource. We must improve it so that the soil will produce more than it did previously. This can be done under our system of agriculture. Many of our soils, especially those developed under forest vegetation, are now more productive than they were when they were first cleared. This has been done by proper farming practises, and by the addition of fertilizer and lime. This is true soil conservation — wise use of the soil so that its productivity is preserved. The methods required to conserve a particular soil, and to improve its productivity, vary with the soil. In many of our Prairie soils protection must be provided against erosion, and farming practises must be suited to areas of limited rainfall.

It is only by combining the research knowledge obtained from our scientific study of soils with knowledge obtained from the centuries-old experience and art of growing crops on soils that we can hope for prosperity for the farmer and the nation, and that we can hope to produce the food required in the future.

The desire for independence has made agriculture an industry of high-owner equity. But recent years have seen increasing amounts of credit required to meet the needs of modern farming. In this article, the history of credit in Canada and the sources are reviewed.

FARM CREDIT IN CANADA

* by J. G. Brown

A Brief History of Credit

Before 1900, farming in Canada was not a business but a way of life. Each farm produced little more than its own requirements, and what was in excess was shipped to a local market. Poor technology forbade specialization, so failure in an individual enterprise was compensated for by others on the farm. Credit was generally limited to small accounts with local merchants, these being incurred and settled on a seasonal basis.

World War 1 and the expanding West led to specialization, and with it, the perils of one and two enterprise farming. Over-production of wheat in 1910-14 led to lower prices and debt incurrences in the West. By 1914, the national farm indebtedness was $200 million. As a percentage of farm capital, this equalled the credit equity of 1960 at 15%. Realizing that little of this was owed for machinery, livestock or improvements, one readily sees the grave land mortgage problem which existed. This debt was owed principally to trust, loan and insurance companies and the railroad. These interests feared the cost of their loans and the problem of disposing with acquired assets so they began to withdraw from agriculture

1917 witnessed the entry of government into farm credit with the formation of provincial agencies in Alberta, Saskatchewan, and Manitoba. This move was largely in response to operators' pleas for protection against mortgage holders, as well as the fail-

ure on the part of business to provide adequate loan services. Government also was unprepared to offer sufficient assistance to the borrowers of its funds, and chartered banks began taking up the slack in credit supply. By 1928, they held the major part of the $188 million debt.

In response to pressure from farm organizations during the technical expansion of the 20's, the federal government introduced the Farm Loan Board. During its thirty-year history (1929 — 1959) it made the insignificant contribution of $79.4 million, $32.5 million of which was loaned between 1935 and 1939, the pre-war years.

Commercial interests continued to withdraw from agriculture until, in 1952, their combined investment in farming was $35 million, $27.5 million of which was held in specialized areas of the prairies.

During World War II, the federal government introduced the Veterans Land Act, a bill responsible for assistance to veterans for farm settlement. This was the credit source in the period 1944-1951, with $120 million extended in loan principles.

The private concerns in farm credit were meanwhile increasing their holdings. By 1958, their total investment was $315 million, or 30% of all credit in agriculture.

From 1944 to the present, chartered banks have extended credit to farmers under the Farm Improvement Loans Act (FILA). They are forbidden by law to hold mortgage securities in agriculture, and so their activities are limited to operation and adjustment credit. In 1961, bank holdings amounted to $486.5 million.

The federal government re-instigated its credit program in 1959 with the passing of the Farm Credit Act. This act created the Farm Credit Corporation, an agency which was prepared to offer managerial assistance to its borrowers. Since that time, the activities of the Corporation (FCC) have expanded until, in 1965, it had disbursed $640.5 million in mortgage credit

The first half of this decade has witnessed large expansions in farm credit, its major sources being private individuals, at 37%; Chartered Banks, at 30% and the federal government, at 13%. Credit has become a mandatory ingredient of agriculture, and this report will continue its study on the basis of the present and projected role of this production factor.

Credit Structure in Canada

Three types of credit are extended to agriculture.

1) Mortgage — loans are extended for which fixed assets are required as security. The common purpose of such credit is the purchase of land, the payment of land-secured debt, or the purchase or improvement of other fixed assets.
2) Adjustment — loans of this type are to facilitate a more profitable arrangement of capital. They are intermediate in length, and are used for the purchase or improvement of variable input factors, such as machinery or breeding stock.
3) Operating — credit is extended on a short term basis to cover the purchase of seasonal inputs such as seed, fertilizer, fuel or feeder stock

Private Individuals

This is the most variable and unpredictable source of credit. It is, although perhaps not by its own choice, the largest single credit source, holding 37% of all farm credit notes in 1962. The major portion of these holding was mortgage credit. Farm owners, wishing to sell their enterprise, often find buyers who are unable to finance the purchase through conventional sources. Th seller is then obliged to complete the agreement on credit terms and become the mortgage holder. Hence the former statement that private participation in farm credit is not largely a matter of choice.

Interest rates are not fixed in the case of this source. Each agreement is reached on the basis of downpayments (thereafter considered to be owner equity), personal repute, nature of the enterprise, and length of finance period. It is therefore difficult to predict the terms of credit before an agreement is discussed, since the individual participants are the determining factors.

Commercial

1) Stores and Dealers. This source carries 2.5% of all farm finance or 6.5% of non-mortgage finance. The credit is of the short-term, operating type. A service charge of 1% per month or less is often levied to cover the cost of billing as well the cost of frozen company assets. The marginal productivity of this credit is relatively high and as a result, stores and dealers are not equipped to handle the volume of credit required by farmers.

2) Sales Financing Companies. These companies are often subsidiaries of manufacturing enterprises. They attempt to meet the need for operating credit not serviced by stores and dealers. Adjustment credit is also undertaken, and notes from the purchaser are taken as security against the purchase. If a tractor is bought, it becomes the security, if seed, then part of the yield is guarantee for payment. 6% of outstanding non-mortgage credit is owed to this source. Interest rates of 12-15% are charged but although the marginal productivity is high, there remains a need for lower-cost finance in this field.

3) Credit Unions and Co-ops. This is not a nationally standardized credit source. For example, the Quebec Farm Improvement Act allows for interest rebates of 3% on loans extended by this source in the province and no such provision exists in other provinces. 12% of non-mortgage farm credit in Saskatchewan is owed to this source but only 1% in Alberta and 2.5% in Ontario. Nationally, this figure is 4%. Intermediate term credit is extended but the terms vary widely from region to region.

4) Trust Loan and Insurance Companies. A wide range of loan types are undertaken by these companies, the total which is 7.5% of all farm credit. Many loan companies offer credit on a personal basis and thus enter agriculture only if the individual borrower is of satisfactory financial stature. Interest rates are high, often equivalent to 24% annum, Trust and insurance companies have been withdrawing from agriculture as stated in the historical outline. Most agricultural credit is now

extended to corporations who maintain agricultural interests; for example, food store chains which maintain production sources. Interest rates range above 7%, but the prospect of individual loans is scarce.

5) Chartered Banks. Chartered banks are fordidden by law to extend mortgage credit to agriculture. Their activities, therefore, are limited to short and intermediate term loans. The FILA was originally designed to cover all bank participation in agriculture. But since it allows for only 5% interest charges, banks have chosen to extend credit through other charter privileges at 6%. They have used FILA financing for risky enterprises, however, because of the government guarantee of 10% of the loss value.

The farm operator is required by FILA, to provide a percentage of the project cost, ranging from 40% in used equipment to 25% on breeding stock. The maximum loan size under this act is $7500.

Because of charter restrictions and interest limits under the FILA, banks have not chosen to tailor a loan program for agriculture. Although they are the second largest source of farm credit, their loans relative to non-farm investments have decreased. From 1953-1962, loans to non-farm enterprises by banks increased 303% but loans to farms only increased by 56%.

Public

1) Provincial. Provincial governments have been active in farm credit since 1917. Quebec first passed credit legislation in 1936. The Quebec Farm Credit Act introduced loans up to $15,000 @ 2.5%, payable in 39.5 years. More recent amendments to this act allow for the reduction of principle payments by $3,000, provided that the land under mortgage is farmed without interruption for 10 years following extension of the loan. Loans to established farmers cannot exceed 80% of the assessed value of the farm, and establishment loans to young farmers cannot exceed 90% of the assessed value of the proposed enterprise.

The Quebec Farm Improvement Act has made possible the extension of intermediate term credit through chartered banks, Caisses Populaires, and credit unions. $3,000 limit has been placed on loans for the purchase of machinery and livestock, and $4,000 for land and building improvement loans. Interest on these loans is the standard 6%, but the provincial government reimburses the borrower by 3%, making the effective rate 3%.

With such inviting terms as described above, it is little wonder that the provincial government ranks 2nd in farm credit sources in Quebec.

2) Federal. The federal government has taken the initiative in designing and instituting an imaginative farm credit program. Before discussing the Farm Credit Act, however, it is necessary to discuss briefly the Veterans Land Act. Passed in 1944, it permitted the extension of credit to veterans for farm settlement. A trained staff is maintained for assistance to borrowers, who, it might be added, have great need thereof. No qualifying experience was required of prospective borrowers, and as a result, current estimates of loan failures run as high as 50%. A recent royal commission suggests that operations under this act will cease by 1968.

The Farm Credit Corporation (FCC) was instituted with the passing of the Farm Credit Act in 1959. This Act defines two types of mortgage loans: Type A, a standard loan up to $40,000 or 75% of the appraised value of the farm, and Type B, a "Package-Deal", loan up to $55,000 or 60% of the appraised value of the land, buildings, livestock, and equipment. Of the latter, 60% must be land value, and not more than 25% equipment value. The interest rate is 5% on the first $20,000 of Type A, and the first $27,000 of Type B. Above this amount, the rate varies depending on the cost to the Corporation of obtaining its funds. Loans may be used in the following manner:

- — to buy land, either by the borrower or by a close relative.
- — to erect buildings or make permanent improvements to fixed assets.
- — to purchase breeding or foundation stock.
- — to purchase equipment.
- — to purchase operating inputs such as fertilizers, seed, or fuel.
- — to finance a secondary, non-farm enterprise.
- — to pay operating and living costs in the early loan period.
- — to discharge liabilities.
- — to undertake any other program approved by the Corporation.

There are 218 farm credit advisors located across the country to provide services as mentioned. Supervision is obligatory under part III, the Package-Deal loan, and a small fee is charged. These services are optional under part II, the Standard loan, but encouraged by the Corporation.

The Farm Credit Corporation is the successor of the Farm Loan Board. Its services and loan conditions as described above have made its credit extremely attractive to borrowers. As a result, in its six years the FCC has extended $483,026,200. This compares with the thirty-year record of the FLB whose total loans amounted to $183,160,586.

The Industrial Development Bank is a credit agency for those enterprises which are unable to obtain credit at reasonable rates from other sources. The first agricultural loan was made in 1959. In 1961, an amendment was passed which permitted the bank to extend loans to enterprises in which the assessment of management is a necessary part of planning. Herein lies the specific importance of the IDB to agriculture. Such risky enterprises as the raising of poultry require good management. Conventional credit agencies either refuse credit to such concerns or charge excessive rates of interest. The IDB accommodates such enterprises and will include managerial ability in its assessment of the operation. Credit is extended at a base rate of 7.5%, but this may vary if the individual circumstances warrant such a charge.

** J. G. Brown is a third-year student in Agricultural Economics at Macdonald College. This article, condensed from a term paper, will be followed next month by Mr. Brown's analysis of the influence of credit on farm practices and its relationship to farm values.*

The Land Use Planning Service of Macdonald College

by PROF. J. F. G. MILLETTE,
DEPT. OF SOIL SCIENCE

The telephone rang; my friend Joe Black, a farmer in Huntingdon County, was in trouble.

"I had my soils tested last year," he said. "I used the best quality seed, I controlled pests, diseases and weeds carefully and I applied the right kind of fertilizer at the recommended rate. One half of the field gave a fair crop of oats, the other half was a complete failure. There must be a minor element deficiency. Do you test for minor element ?"

"Easy now, Joe, easy," I replied; "I must first examine the patient before I can recommend a specific treatment. The fertility of your soil was tested, but what about other properties like texture, tilth, water balance, aeration, thickness of rootbed over compacted layer, erosion, etc. ? Have you had them tested ?"

"How is that testing done and who is going to do it?" said Joe.

"The Department of Soil Science of Macdonald College has just started to operate a Land Use Planning Service which will tell you all that you need to know about the proper management of your soils for your present type of farming and what other crops could be grown successfully on your farm."

In fact the service is rather simple and is available to any farmer who wishes to invest a bit of money to know his farmland in detail.

A detailed soil survey, showing the kind of soils, their texture, slope, stoniness, drainage and fertility will be conducted on an enlarged aerial photograph of Joe Black's farm. The scale is one inch equals 330 feet. It means that a 9 acre field will be approximately a square with two inch sides on the photograph.

Before starting the survey of Joe's farm, the history of each field will be recorded. The survey will be conducted in the field by a crew of specialists, accompanied by Joe Black. For the survey small holes will be dug as deep as 40 inches sometimes, to identify the kind of soil. Stoniness and gravel contents will be assessed, slopes will be measured and recorded on the map. The drainage class (there are seven of them) will be indicated for each soil unit as well as texture of surface and unusual variations of the subsoil. Samples will be taken for analyses of the top six inches and from six to twelve inches, for each important soil unit of the farm.

The most useful part of the Land Use Planning Service consists of five interpretive maps and of a recipe for soil management for all the crops that Joe Black grows in his type of farming (see the maps). From the analytical results, combined with interpretation of the soil map a *pH map,* showing lime requirements and a *fertility map* showing levels of nitrogen, phosphorus, potassium and organic matter will be prepared. They are the only two maps that are liable to change after one rotation. They will indicate the changes that could have taken place.

Another map will show the exact *drainage* of each soil unit. A *management map* will list all the problems and their degree of seriousness, that need corrective treatment, or that must be kept in continuous check to make each unit of soil most productive. Last will be the *crop adaptability map* which will list all the crops that could be grown on each type of soil, with the best management practices under the climate of the area. It means that Joe would know all the crops that he could grow on his farm if he ever wished to change his type of farming.

Finally, the last service, which will be included in the deal, is the recipe that Joe Black will be given, to practice the best soil management to obtain the most profitable yields for the cropping system that he has requested. Since the recommendations are made for a complete rotation he will be advised to have his soils analyzed each time the crop rotation repeats itself.

In the farm report submitted to Joe the recommendations will be presented as follows :

Joe Black has a four-year rotation of corn, oats, hay and pasture and the recommendations for each soil area represented on the maps will be :

On Chateauguay clay loam (see the soil map, page 11).

for Corn — Variety — Dekalb 29 or Pride 4
— Fertilizer — 1000 lbs./acre of 10-10-10

for Oats — Variety — Glen or Dorval
— Fertilizer — 300 lbs./acre of 8-16-16

for Hay — Variety — Quebec mixture 14
— Fertilizer — 600 lbs./acre of 8-16-16 on oats stubble
— 150 lbs./acre of Ammonium Nitrate, in the Spring
Liming — 0.5 ton/acre on oats stubble

for Pasture — Fertilizer — 500 lbs./acre of 2-10-20 in the Spring.

On St. Bernard loam

for Corn — Variety — Dekalb 29 or Pride 4
Fertilizer — 1200 lbs./acre of 8-16-16
Contour strip cropping with intermediate bands of hay
— Stones must be removed

for Oats — Variety, Glen or Dorval
— Fertilizers, 400 lbs./acre 8-16-16
— Contour strip cropping
— stones to be removed

for Hay — Variety — Quebec mixture 14
— Fertilizer — 600 lbs./acre of 8-16-16 on oats stubble
200 lbs./acre of Ammonium nitrate in the Spring

for Pasture — Fertilizer — 250 lbs./acre of 5-20-20

Joe Black will be requested to fill in duplicate each year a crop yield record sheet, one copy of which will be sent to the Land Use Planning Service. The records will inform the farmer of the progress so far accomplished and will help the Soil Testing Service of Macdonald College improve the calibration of the soil tests for each crop on each soil type of the area.

The total cost of the service to Joe will be $2.20 per acre within a 125-mile radius of Macdonald College with a minimum of 50 acres. Beyond that distance, rates are $2.50 an acre and the minimum is 75 acres.

A maximum of 100 farms can be surveyed in one season, and applications should be sent in a few days so the survey work can be done during the Summer and the individual reports forwarded the following Fall.

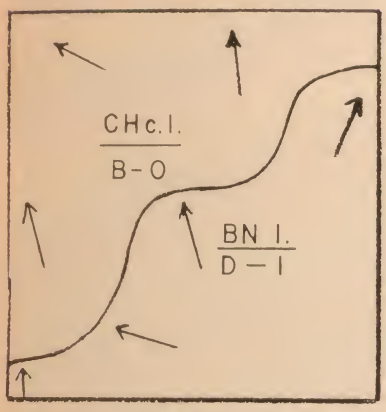
Application forms may be obtained from :

THE LAND USE PLANNING SERVICE,
P. O. Box 329,
Macdonald College, Prov. Quebec.

THE MAPS PROVIDED BY THE SERVICE

(THIS IS A 9 ACRE FIELD)
— THE MEANING OF THE SYMBOLS —

MAP 1



SOILS

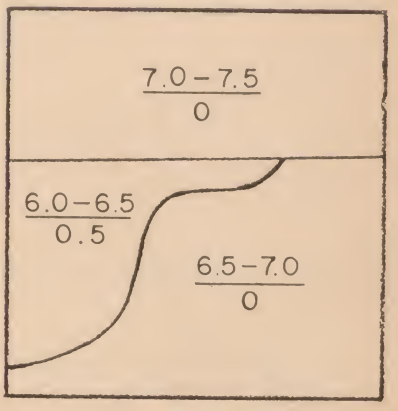
FOR MAP 1

CHc.	1	= Chateauguay clay loam
BN	1	= St. Bernard loam
B		= Slopes between 0.5% and 2%
D		= Slopes between 5% and 9%
→		= Orientation of the slopes
O		= Stone free
1		= Stones about 100 feet apart

FOR MAP 2

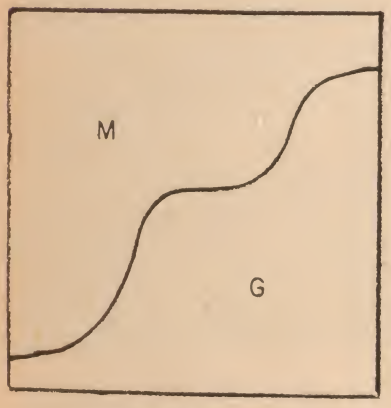
7.0-7.5	= pH value
0.5	= Tons of lime required

MAP 2



PH & LIME

MAP 3



DRAINAGE

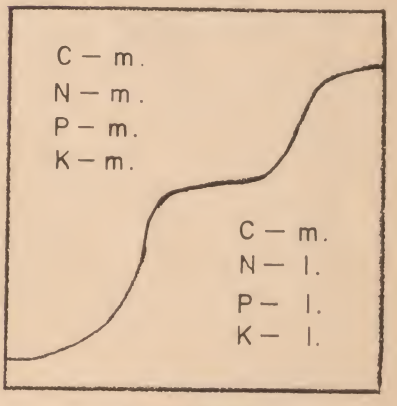
FOR MAP 3

M	= Moderate drainage
G	= Good drainage

FOR MAP 4

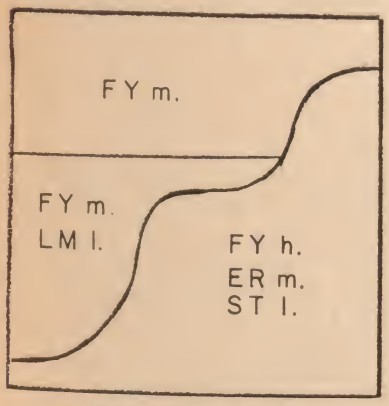
C	= Carbon content
N	= Nitrogen content
P	= Phosphorus content
K	= Potassium content
m	= Medium level
l	= Low level

MAP 4



FERTILITY

MAP 5



MANAGEMENT

FOR MAP 5

FY	= Fertility necessary
LM	= Lime necessary
ER	= Erosion control necessary
ST	= Stone removal necessary
h	= High level
m	= medium level
l	= low level

(see article page 10)

MAP 6

ALFALFA
BEANS
CEREALS
CLOVERS
GRAIN CORN
FLAX
GARDEN CROPS
HAY
ORCHARD
PEAS
PASTURE
SUGAR BEET
SUDAX
SMALL FRUITS
SUNFLOWER
SOYBEAN

CROP ADAPTALITY

THE FAMILY FARM

PUBLISHED IN THE INTERESTS OF THE FARMERS OF THE PROVINCE
BY THE
QUEBEC DEPARTMENT OF AGRICULTURE AND COLONIZATION

Compiled by T. Pickup of the Information and Research Service, Quebec Department of Agriculture and Colonization.

This month in the

FAMILY FARM

Section

PHOTOGRAPHS BY OMER BEAUDOIN

The land occupied by this unruly watercourse on the farm of Mr. H. L. Guimond at St-Edouard, Lotbinière, was reduced from 26 to 10 arpents under the farm improvement programme.

Increased subsidization of mechanized farm improvement works

Mr. Alcide Courcy has announced that the grant of the Department of Agriculture and Colonization for land improvement projects — commonly called "mechanized works" — will henceforth be payable on a maximum of 30 hours of such work per farmer, instead of 20, in all counties of Quebec outside the rural development areas (Northwestern Quebec and Lower St. Lawrence — Gaspé) where there is no limit on the number of hours.

It is expected that this increase in the number of subsidizable hours of mechanized work will encourage the rapid improvement of farms and hence the consolidation of agriculture. This assistance policy applies only to mechanized works for purely agricultural purposes, such as clearing, removal of stumps and stones, levelling, surface drainage, deep ploughing, and the harrowing of land ploughed at least 12

(continued on page 16)

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

New light on potato scab

Mr. Joseph Savard with one of the unblemished potatoes that he grows on his hundred acres of sandy land at Peribonka, Roberval

Common scab on potatoes occurs as the result of a complex interaction of environmental factors with both the scab organism and the potato plant. These factors may affect the nutrition and resistance of the crop or the virulence of the organism, either directly or through interaction with some other factor in the soil.

Scab is much more prevalent on well-limed soils and one means of controlling the disease is to acidify the soil to a very strongly acid condition. On liming, the amount of soil manganese available to the plant is greatly reduced, sometimes to such an extent that deficiency conditions are produced. On the other hand, acidification of the soil with sulphur, aluminium sulphate or other acid-producing fertilizers increases the available manganese content of the soil and results in increased uptake of manganese by the plant.

This intimate relationship between manganese availability and soil reaction, together with the importance of soil acidity in the development of scab, suggests that the resistance to scab associated with acid soils is due to the higher levels of available manganese found in these soils and not to the acidity itself.

Experiments conducted in the West of Scotland have shown that a marked reduction in scab can be achieved by the placement of relatively small dressings of manganese sulphate, mixed with the fertilizer, in the drill at planting time. Effective control has been obtained with an application of 56 pounds per acre of manganese sulphate and, in some cases, as little as 28 pounds per acre has been sufficient to give a clean crop.

The application to the growing crop of two sprays of a 2 per cent man-

(continued on page 16)

Aid for consolidation of non-viable farms

Mr. Alcide Courcy, Minister of Agriculture and Colonization, has announced a decision by the Quebec Government to encourage the enlargement and development of farms by means of the ARDA programme whereby farmers purchasing more land with a view to putting their agricultural enterprises on a sound economic footing will be assisted.

This measure is intended for professional farmers who borrow from provincial or federal farm credit institutions in order to buy additional, neighbouring land for the purpose of enlarging farms which are not big enough to provide the owner and his family with a living.

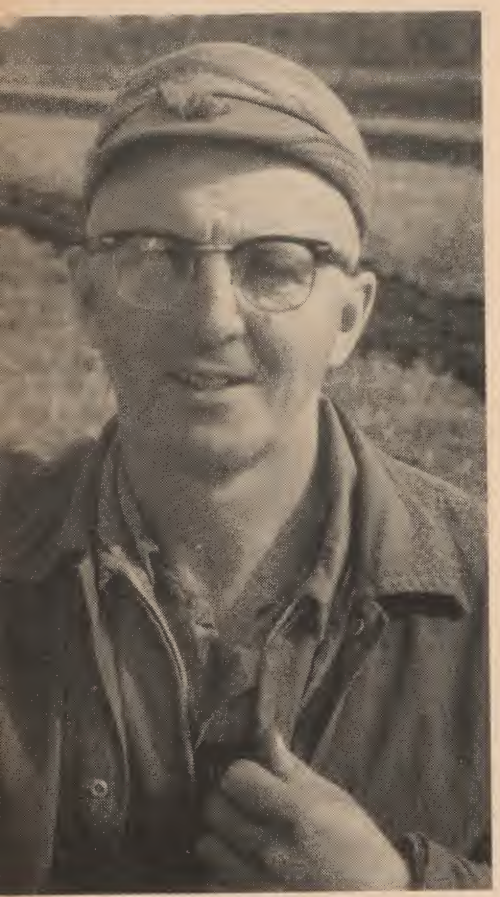
The financial assistance consists of a grant of $50 an acre on a maximum area of 40 acres of arable land purchased to enlarge a farming enterprise. This grant is restricted to farmers whose home-farm contains less than 120 acres under cultivation. The maximum amount of the subsidy, namely $2,000, will be reached in cases where the applicant's home-farm has 80 or fewer acres under cultivation and the extra land purchased has 40 or more acres under cultivation.

Application of this measure to encourage consolidation of non-viable agricultural enterprises will come into force on April 1st 1966, and will require the cooperation of various services or divisions of the Department of Agriculture and Colonization. Qualified valuers of the Quebec Farm Credit Bureau will assess the value of farmlands; the Land Utilization Division will

(continued on page 16)

A really consolidated family farming enterprise: the farm at St-Prime, Roberval, which Mr. Johnny Bergeron operates with the help of four of his sons. Note the five separate homes bordering the road

THE FARM OF ALLAN



Mr. Allan Hammond — champion plowman

In 1959, Mr. Allan D. Hammond took over the farm formerly operated by his father beside route 8 between Montreal and Ottawa, one mile from Lachute. It comprises 190 acres of gently rolling land where the stones that littered it have obviously been a serious problem. Some stones have been buried and many others have been piled in long rows which now serve as fences. Mr. Hammond has also rented a farm of 35 acres on the outskirts of Lachute and expects to harvest 50 tons of fodder and 500 bushels of oats from it.

There is a fine maple bush covering some twenty acres, in which about 1100 tappings are made. The cattle are allowed into this bush to seek shade from strong sunlight, but if they are allowed to do so for several years they will prevent the older trees from being replaced by younger ones. The sugar camp located 300 feet from the highway is provided with modern equipment.

Because of rocky outcrops in some places and thinness of the arable layer of soil, 25 acres of land are left in pasture.

At the time of judging, on the fifth of August, all the fields were suffering from the drought. The fields in the rotation were cropped as follows in 1965 : 18 acres of Pride corn, 32 acres of Glen oats, 14 acres of Champlain barley, and 10 acres of mixed grains (oats and barley). The rest of the land is in hay or pasture. The corn and grain are clean. Mr. Hammond controls weeds by means of summer-fallowing and herbicides. His tillage operations are carried out with care; indeed they bear the hall-mark of a champion ploughman who has represented his country in international contests in Germany and Italy. At Stuttgart in 1958, he came twelfth out of 29 competitors and, at Rome in 1960, fifth out of 34.

Mr. Hammond is fond of Ayrshire cattle : his herd comprises 44 milk cows of good type and about 30 young stock. The best cows — the ones he wants to raise calves from — are inseminated under an agreement with the artificial insemination centre at Kemptville in Ontario; the rest of the cows are mated with the bull kept on the farm. The record of milk shipments indicates an average annual production of 7800 pounds per cow. The herd was entered for official ROP testing in September 1964 and Mr. Hammond will thereby obtain precise information as a guide to better selection, from which he will in turn derive full advantage because he does not show any signs of begrudging his animals good feed. In summer, there are emergency pastures of oats sown for the cows and, in the barn, the cattle are fed hay of excellent quality and plenty of silage and protein supplements. Mr. Hammond's attention to his animals' needs is carried to the extent of covering with little sheet-metal shelters the mineral salts which he sets out in each pasture.

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

). HAMMOND

The livestock also includes two Belgian work-horses.

The farm buildings are impressive. The barn is roughly L-shaped and is 38 feet high. The longer arm measures 105 by 30 feet and the shorter, 95 by 36. It is equipped with an automatic stable cleaner and electric ventilation. A grinding mill and a mixer in the feed-room are used to prepare concentrates for the cattle right on the spot. There are two concrete silos, one 30 feet high by 14 in diameter, the other 30 x 12. These are used for corn silage. The milk-house is a modern one, but although it has been equipped with a bulk cooling tank for the past eight years, Mr. Hammond has had to transfer his milk to cans for shipment until about ten months ago, when the dairy which buys his milk started collection with a milk-tanker. The machinery shed has been made longer whenever more space was needed, and now extends for 170 feet following the direction of the farm road in an intriguing curve. In addition to the usual implements, it contains a manure spreader, a combine, a threshing machine, a seeder, a corn-binder, a pick-up baler and a bale-elevator. The workshop is conveniently placed in the middle of the building.

Including the livestock and equipment, the whole property is valued at $69,000.

Mr. Hammond is one of the elders of his church. He is also a director of the local fire-insurance mutual. Mrs. Hammond, who studied the domestic arts at Macdonald College, divides her energies between her home, her magnificent garden, the Women's Institute and her gardening club. The Hammonds live with their three children (the eldest of whom is five) and Mrs. Hammond's mother and a permanent employee in a roomy brick house whose surroundings are decorated with a cedar hedge and beds of flowers.

(From the Report on the Agriculture Merit Contest for 1965)

One end of Mr. Allan Hammond's well-kept, L-shaped barn at Lachute.

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

INCREASED —

(continued from page 12)

inches deep, and to certain other well-defined development projects.

The contribution which the farmer is required to pay ranges from $2.50 to $5.50 per effective hour, according to the kind of work and the horse-power of the tractor used. For the 967,230 hours of work carried out in 1965, the farmer's average contribution was $4.00 and the Government's $8.32. The Department of Agriculture and Colonization devoted $7,950,800 to the work, $2,700,000 of which was derived from ARDA funds.

NEW —

(continued from page 13)

ganese sulphate solution at 100 gallons per acre was found to give nearly as good a control as the soil application.

Relatively clean crops have been obtained with treatment with manganese on soil where untreated plants produced almost unmarketable tubers. In many of the experiments it has also been noted that manganese treatment reduced the number of tubers with black scurf and the number of tubers damaged by blight. At all experimental centres the general appearance of the tubers was greatly improved by the manganese treatment. On the basis of the experiments to date it would appear that the incidence of common scab on potatoes is intimately related to the available manganese status of the soil and that the environmental factors known to influence development of scab may be related only in so far as they affect the availability of the manganese that is present in the soil. (From "Farmer & Stockbreeder)

AID —

(continued from page 13)

be responsible for approving the amount of the grant; and finally the local agricultural information office will advise the farmer concerning the use of this financial assistance with a view to rendering the farming enterprise more profitable.

The arable area of farms, which averaged 70 acres according to the 1961 census, could be considerably increased by this government assistance.

The Deputy Minister of Agriculture and Colonization,
ERNEST MERCIER,
Agronomist.
QUEBEC, March 9th, 1966.
rb

DEPARTMENT OF AGRICULTURE AND COLONIZATION
PROVINCE OF QUEBEC

HEALTH OF ANIMALS DIVISION

ASSISTANCE POLICY

ASSISTANCE TO MINK BREEDERS OF QUEBEC

The aims of this assistance policy are as follows:

1. To prevent outbreaks of distemper, botulism, and infections enteritis among mink;
2. To make available to mink breeders, for a small charge, the vaccines needed for the prevention of these three diseases, which can cause considerable losses in their herds;
3. To provide them with the service of veterinarians to administer the vaccines.

CONDITIONS FOR THE USE OF THE VACCINATIONS

1. A charge of four cents per dose of vaccine must be paid by mink breeders wishing to make use of preventive vaccination against distemper;
2. A charge of six cents per dose of the combined vaccines must be paid by mink breeders wishing to make use of preventive vaccination against botulism and infections enteritis;
3. If a breeder wishes to make use of vaccination against all three diseases he must pay a charge of ten cents per animal;
4. The breeder must provide the assistance needed in administering the vaccine;
5. In order to make this assistance policy easier to carry out, the vaccinations must be performed at the following times;
   a) Young mink : from the 1st of July to the 15th of September (9 to 10 weeks of age);
   b) Adults : from the 1st of December to the 15th of February (at least one month before mating).
6. The cost of the vaccines and the veterinarians fees will be paid by the Department.

The Department will not be responsible in any way for mortalities, losses, accidents or damages following upon vaccinations.

QUEBEC, 1st of March, 1966

The Deputy Minister of Agriculture and Colonization,
ERNEST MERCIER

New director of the agricultural information office

Mr. Alcide Courcy has announced the appointment of Mr. Patrice Boudreau as director of the Information Office in the Quebec Department of Agriculture and Colonization.

Born in Nova Scotia in 1915, Mr. Boudreau obtained his secondary education at the "Petit Séminaire de Tours" in France and subsequently studied at the School of Agriculture and Fisheries of Sainte-Anne-de-la-Pocatière.

After a period of specialized training in adult education according to the methods of the Antigonish movement, he helped to organize fishermen's co-operatives in the Gaspé and in French-speaking regions of the Maritime Provinces and was assistant manager and export manager of the United Fishermen's Federation of Quebec.

In 1951 he joined the staff of the National Film Board and was director of distribution and information for Quebec in that orgnization.

Since 1957, Mr. Boudreau has directed a business enterprise in Nova Scotia and at the same time acted as special correspondent for the French network of the CBC.

This page supplied in the interests of the Family Farm by the Quebec Department of Agriculture and Colonization.

THE BETTER IMPULSE . . .

News and Views of the Women's Institute of Quebec

SALUTE TO THE FLAG

Some branches begin their meetings with a Salute to the Flag. COWANSVILLE drafted the following revision to the Salute, which they feel is better adapted to the new Canadian Flag:

Behold our Flag, the Maple Leaf,
The emblem of our loyalty;
Two colours for us to cherish:
The red for courage,
The white for purity,
The whole for unity.
We pledge allegiance to this flag,
To Canada, our native land,
And to the world of nations for which we strive.

ALL BRANCHES held Annual Meetings, with reading of yearly reports and elections. Thanks were expressed to retiring officers for their contributions to the work of the W.I., and a welcome and a promise of cooperation extended to newly installed or continuing officers. Programs for next year should be excellent, with many branches having a special program committee to plan, organize, and to keep programs interesting and worthwhile. Discussions were held in many branches on Centennial Projects and what each branch might do; on Expo '67, its exhibits, ticket sales, and the need for tourist accommodation; and on agriculture, with opinions expressed forwarded to Mrs. McGibbon to assist in preparation of brief to the Provincial Agriculture Commission. Many branches heard excellent reports of the Provincial Semi-Annual Meeting.

THE LADY FROM MEXICO

Early in September several counties of the Quebec Women's Institutes were approached by "The Experiment in International Living" and asked if they could arrange a "homestay" for Miss Rosa Rodriguez of Mexico. The Experiment in International Living is an organization which has arranged homestays in Europe and United States over a number of years hoping to further good relations throughout the world by increasing our knowledge of each other.

Families in various locations offered to open their homes to Miss Rodriguez. The Experiment arranged two homestays each of two weeks duration, one at the farm of Mr. and Mrs. A. Cavers near Ormstown, the second with Mr. and Mrs. P. Clark of Brownsburg.

Mrs. B. A. Turner presenting Life Membership pin to Mrs. A. Fairbrother, President of Milby WI, Sherbrooke County.

W.I. members of Argenteuil County as well as the community as a whole looked forward to Miss Rodriguez' visit as an opportunity to extend warm hospitality, little realizing the impact Rosa, as we came to call her, would have on those she met. It was indeed a rewarding experience as well as thought provoking.

Miss Rodriguez was visiting Canada on a scholarship, to investigate our standards and ways of living especially in rural areas. Rosa is supervisor of sixty social workers, "Orientadoras Rurales", as they are called. She assigns each of her workers a program to work on for a year in a specifically designated area. These workers go out and live among the Mexican people in backward areas. They teach the women about proper nutrition, how to prepare food and how to make clothing and shoes. The men are shown how to improve the condition of their mud huts, and when possible taught trades or instructed in modern methods of agriculture. Miss Roodriguez' helpers spend as much time as possible with the young people. Lack of sufficient educational facilities and teachers is a problem in most rural areas.

During her stay Rosa met with various groups, not only leaving a picture of the contrast in the lives of rich and poor in Mexico but leaving each and every one with a realization of the importance of studying other languages.

Argenteuil county was fortunate as Miss Caya, a local French specialist, had also studied Spanish, and often acted as interpreter.

At the County W.I. Semi-annual convention, Miss Caya showed slides taken while studying in Mexico. Rosa spoke a few words in English, then answered numerous questions about her work and life in Mexico. What might have been merely a hopeless effort to communicate became a stimulating experience. Later, again with the assistance of Miss Caya, Rosa talked to the Lachute High School History Club and visited a Grade 6 class, who were working on a Mexican project, and

delighted her youthful audience with factual information on Mexico.

From the following interview with Mrs. Clark I learned more of Rosa and her homestay at the Clark farm.

Mrs. Clark said, "I benefited from Rosa's homestay but hope that Rosa's picture of the Canadian way of life was not too distorted by the many misunderstandings that arose as we struggled to communicate using a dictionary, Eaton's catalogue, our hands and our intuition. Rosa's visit left me with profound admiration of her thoughtfulness and her earnest endeavour to enter into our way of living. It was sometime before I realized that "Yes, yes", did not always mean that Rosa understood. She

Mrs. Hollis Pagé, present treasurer, Abercorn W.I., pinning F.W.I.C. pin on retiring treasurer, Mrs. Hector Garland, member for 40 years.

was often merely steeling herself to face yet another experience without any forewarning of what might be about to occur. Before Rosa arrived I was told she wished to spend Sunday as we did rather than attend worship at a church of her own faith. Sunday morning I explained that I taught a class in Sunday School and we all attended, remaining after for the church service. Rosa said, "Yes, yes", went to her room and came back carrying a shopping bag. As Rosa had given us several gifts from Mexico, my intuition told me this bag held something of interest for my pupils. Rosa watched the proceedings with evident interest, joined in the singing, bowed reverently in prayer, returned home with the bag still unopened. Next Sunday Rosa accompanied us to church, this time without her knitting.

"On learning that the local W.I. was to meet at my home, Rosa expressed the desire to prepare a Mexican dish, Bunuelos, eaten by the rural people on festive occasions. The day previous to the meeting Rosa prepared to bake, asking for simple ingredients — flour, salt, water and oil. No type of oil or shortening seemed to be satisfactory but at least Rosa, always polite, took the ingredients, mixed and fried in oil some forty biscuits, not unlike enlarged social tea biscuits. On these she placed small pieces of cheese, diced ripe tomatoes and bits of boiled mashed potatoes. The platters were colorful and Rosa bravely passed the Bunuelos to our guests. Each guest dealt with the Bunuelo according to her initiative, some few downed the biscuit, one or two dunked, those with nimble fingers hid the Bunuelo in their purse or rolled it in a serviette after eating the topping. All marvelled that even the very poor could eat such a leathery substance. A week later a neighbor asked Rosa for the recipe. The answer: flour, salt water (or milk) ad Royal. Then came the light — Royal to Rosa meant yeast.

"One evening noticing that Rosa seemed withdrawn and almost sad, I thought of a gentleman whose wife spoke Spanish. Although almost a stranger, I phoned and asked if his wife would talk with Rosa. It would be impossible to describe the change in Rosa's expression as she returned from the telephone after the conversation. The same pleasure was evident on the various occasions Rosa was with Miss Caya. How I longed to be able to converse freely and not be restricted by language barriers !

"In conclusion I must add that one thing seemed to give Rosa as much enjoyment as an opportunity to talk in her native tongue. At the W.I. Semi-annual convention, Rosa was presented with a W.I. pin. From that day Rosa approached me with the W.I. pin before we left the house. I pinned it on her lapel. This ritual completed, we went out to meet the unknown fortified by this symbol of friendship."

After chatting with Mrs. Clark, it seemed that Rosa's visit should mean more than an interesting episode to be quickly forgotten. The problem of communicating should serve as a challenge. How interested are we in learning a second, or even a third, language ? Has anyone looked at a map recently taken from the top of the world ? Do many of our problems, local or international, stem from the fact that we mistake "Royal" for "Oil" and thus our efforts lack the yeast of understanding ?

Elsie Graham
Provincial Convenor of Education
Quebec Women's Institutes

THE IMPORTANCE OF THE CONVENOR

The convenor, yes, a very important need and most important position. Our Institute work being divided into six departments, here the convenor is the head at all levels — branch, county, provincial, and so on.

At the branch level, the beginning of this important work is laid out in the year's program where one meeting as a rule is given over to one department with the convenor in charge. We will deal with Home Economics; therefore the convenor will, if time permits, have a speaker regarding some phase of the work, which certainly takes in one of the biggest fields.

The talk may be on home management, some type of cookery, sewing, crafts, economy ideas — oh, the list is endless. Or she may have a demonstration on candle-making, fancy sandwiches, knitting know-how or perhaps by asking the members to do just something many of them would like to learn. We do learn so much easier by seeing and doing on the spot.

And don't forget to be on the alert, when at other meetings, to pick up ideas and helpful hints — jot them down to use later yourself. You might even arrange a course in your branch in some craft, or just helpful ideas, having your well-informed members as the leaders or yourself if you have something you do well, and are willing to share.

Then too at most meetings, convenors are given a few minutes each. Always be ready with a good idea, an informative clipping along the lines of your convenorship, perhaps from your C.A.C. bulletin.

Displays too can add to your programs. Old cookbooks, irons, endless items. Contests, hand or machine-made crafts, cooking, novelties — whatever your members would be most interested in. Make use of the pamphlet library — excellent material on many subjects.

Keep members well informed of anything going on at all levels and urge them to take part.

Have a few sheets clipped to your program or a special notebook and jot down everything you do and sometimes someone else will report something that would be in your department. Add this too.

When it is time to compile your annual report, you will have excellent material and moreover the satisfaction of hearing your presidents at all levels rise up and call you blessed, because on you, the convenor, the president is wholly dependent for a very interesting and instructive meeting and an outstanding year.

Now with all this in easy reach, please let us have full reports from every branch this year as our goal and if I can be of further assistance, do not hesitate to contact me.

Olive M. Wallace
Q. W. I. Home Economics Convenor

AYER'S CLIFF HONOURS MRS W. ROBINSON

Mrs. W. Robinson of Ayer's Cliff was honoured recently for completing 30 years perfect attendance at meetings. She was presented on arrival with a corsage of carnations.

Mrs. R. Knight, County President presented Mrs. Robinson with an Alaska Black Diamond ring, a gift from branch members. Mrs. Knight congratulated her on this remarkable achievement, saying that she doubted if it were surpassed in Canada, perhaps even in the world. Mrs. Robinson expressed thanks in a most pleasing manner, and made the initial cut in a beautifully iced cake, made and decorated by Mrs. W. Cass for this special event.

It is not often that a group has such a devoted member as Mrs. Robinson. She is not only a regular attendant but has been branch treasurer for many years, has served as secretary and held convenerships. She is always most willing to serve on committees and is a most helpful member at all times. She was given a Life Membership by the branch 10 years ago, in recognition of her services. It is the sincere hope of all that Mrs. Robinson may continue to have good health and to attend meetings for many years to come.

EXPO TICKETS

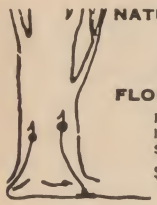
Remember the price goes up after July 31st, 1966 — So order early ! ! !

The Month With The W. I.

ABITIBI: MATAGAMI held successful sewing course.
ARGENTEUIL: ARUNDEL held Valentine party, with Mrs. Balley as MC for games; members brought, displayed and told about interesting old articles, some as old as 150 years. BROWNSBURG members gave a news item of the day; Mrs. I. Bailey showed slides and spoke on Ethiopia; held Fashion Show "Here Comes the Bride" with gowns from 1850-1966 on display; Annual Meeting took form of a supper, served by U.C.W. members, with Mrs. G. McGibbon and Mrs. C. Hall, County President as guests.
DALESVILLE-LOUISA answered roll call by telling how each met her husband; Drama committee reported. FRONTIER held demonstration on sewing in sleeves, exchanged sewing hints; each member gave a household hint; articles brought in and sold for WI funds; working on a Spring Play. JERUSALEM-BETHANY: Mrs. Beals showed slides on Calgary Stampede and other Canadian scenes; quilt made for Red Cross; roll call named member's best subject in school; gave books to Kindergarten. LACHUTE: Mrs. G. McGibbon gave report on ACWW Convention in Dublin, spoke on work of Irish Countrymen's Association and displayed some Irish handicraft LAKEFIELD welcomed two new members; named favourite magazine in answer to roll call; word contest held, prizes given. MORIN HEIGHTS held Pot Luck Supper. PIONEER: Mrs. C. Hughes showed slides on South America, particularly Chile where the Hughes family lived for 16 months; she displayed handicraft from these countries and Trinidad; letter read from Mrs. J. Craig, Fort Providence WI, NWT, acknowledging receipt of patterns and old nylons sent by the branch, with Indian women learning to use patterns in sewing, and using nylons for handicraft; for roll call read interesting article from newspaper or magazine; rehearsing one-act play. UPPER LACHUTE EAST END named "something new" in the medical world as roll call; heard report on Senior Citizen Home; held successful White Elephant Sale with Mrs. S. Smith as auctioneer; held successful Whist party; honoured Mrs. W. Hume with presentation of Life Membership pin, in recognition of her service to the branch; Mrs. Hume brought in quilt she had made for Red Cross.

BROME: ABERCORN gratefully acknowledges cheque received from the Dept. of Agriculture, money to help defray expenses for painting and for improvement of the grounds of the W.I. Hall; film on Quebec shown; hints on housecleaning; all donated food to burned-out family, with more arranged for, for future delivery; excellent report of Semi-Annual given by delegates, Mrs. E. Sherrer. SOUTH BOLTON decorated paper plates with monies for every holiday and members birthday, with funds for branch use, and with Mrs. M. Davies winning first prize; plans made for outside painting of Institute Hall as part of Centennial project; SUTTON: Mrs. O. H. Baker, teacher of Home Economics in High School, gave vivid and interesting picture of work done in preparing pupils to be future homemakers, stating that there is keen interest by students in all grades; roll call gave recipe for lunch box surprise; more mending given out for Flambeau Home, and clothing donations given; rehearsing a play; members wore Valentines, recited a Valentine verse, some being original and very good!
CHATEAUGUAY-HUNTINGDON: AUBREY-RIVERFIELD: Mrs. H. Robertson, County President, reported on Provincial Semi-Annual. DEWITTVILLE: Mrs. M. Campbell, Vice-Principal Ormstown, gave book review; sponsored a "Theatre Night" with a good movie shown in Huntingdon Theatre, with proceeds going to the local School for Retarded Children — a most successful financial venture. DUNDEE sent funeral flowers to the late Mrs. E. Gardiner, a most valued member, and one-time Provincial Convener of Education; discussed brief on Agriculture; Larry and Dale Ferguson, young sons of the hostess, entertained members. FRANKLIN CENTRE continue their sponsorship of cooking class in school, with a quilt made and sold to help defray expenses; roll call-an Irish Song. HEMMINGFORD gave Expo '67 Day Passports to winners on Public Speaking Contest. HOWICK enjoyed visit from Mrs. H. Robertson, County President; demonstration of different kinds of muffins, which were later served buffet style with cheese and jellies; recipes were displayed with each type of muffin; held decorated cake contest. HUNTINGDON voted prize money for Children's Dept. of Huntingdon Fair. ORMSTOWN welcomed a new member; discussed Expo '67 and tourist accommodation. **All Branches** sponsored Public Speaking contests in the 5 High Schools, arranging the contests, appointing judges, and donating prizes.
GATINEAU: AYLMER EAST welcomed a new member. EARDLEY discussed Expo '67, re purchase of tickets, and possible chartering of bus with neighbouring WI's. KAZABAZUA: Mrs. E. Gracey gave reading on Health and Welfare; Mrs. A. Brown gave demonstration on making a Tea Apron from a serviette, and on making a lint remover from a nylon sponge; contest on "name the company", by the clipped newspaper ads. RUPERT held their 40th Anniversary meeting, with 3 charter members present; catered Youth and Welfare Carnival Banquet with excellent financial returns; plant sent to sick member. WRIGHT appointed committee to plan something special for Centennial; for roll call named a favourite Irish song and sang one verse.
MEGANTIC: INVERNESS visited local Senior Citizen's Home and showed slides; bought meat platters to be used in 100F Hall for suppers; report on Semi-Annual by County President.
KINNEAR'S MILLS: each member

Mrs. W. Robinson, right, receiving gift from Stanstead County President, Mrs. R. Knight, in recognition of 30 years perfect attendance.



demonstrated home-made Valentine; discussed Expo '67.

MISSISQUOI: COWANSVILLE drafted a revision of the Salute to the Flag, so as to adapt it to the new Canadian flag

STANBRIDGE EAST received donation of remnants from mail-order house; contributed to Home Economics calss in local school.

MONTCALM: RAWDON had demonstration of hand-woven nylon place mats by member, Mrs. Laliberte.
PAPINEAU: planned and held successful Bake Sale.

PONTIAC: BRISTOL: slides shown of far North and of Vancouver; Mrs. Dickson spoke on the Pontiac Centennial Project; held number contest, and contest on know your advertisements; Household Science teacher showed film and spoke on Frozen Foods; held sale of cookies. FORT COULONGE donated towels and face cloths to Pontiac Hospital; Dr. Rabb spoke on the value of the Vanier Canadian Conference, and of the family, stressing the importance of education and of good parent-child relationships. SHAWVILLE: Mr. Hanna, principal of Shawville High School, spoke on education for our young people; donated to Cemetery Fund, and to Pontiac Historical Society; article read on Immunization of Adults against polio. QUYON brought in articles for sale; contest on making words from word Valentine. WYMAN had talk by a member on a juice factory, which she had recently visited in Florida; Mrs. Fraser, County President, gave splendid report on Provincial Semi-Annual.

ROUVILLE: ABBOTSFORD: Four members participating in play reading, "The Case of the Missing Handshake"; Mrs. H. Marshall to act as chairman of committee for study of Agriculture Brief.

ROUYN - NORANDA: NORANDA: held successful card party, sold a doll to raise funds; Mrs. G. Leszkowicz appointed to arrange for Christmas stockings. ROUYN held successful card party; sold heirloom quilt to raise funds.

SHEFFORD: GRANBY WEST held successful card party with proceeds donated to lunch fund for needy children at Granby High School. WATERLOO-WARDEN held most successful card party; played weight-guessing game.

SHERBROOKE: ASCOT catered a wedding banquet; delegate reported on County Quarterly meeting; held scrambled word contest; each member gave short speech on a subject draw from hat, which proved most amusing; Centennial projects discussed; Mrs. W. Pearson was thanked for bringing the Branch history up to date from 1958. BELVEDERE donated diapers to Cecil Butters Home; held pot luck supper to which members' families were invited, and social evening enjoyed; coloured slides of trips through USA and Canada were shown; two minutes silence observed to honour memory of the late Lieut.-Governor, Paul Comtois; catered a wedding reception; donated to Association for Retarded Children; received grant from Provincial government. BROMPTON ROAD held contest on longest stride, each paying a cent for every inch of their stride, with a prize for the longest one; held two dances; worked at Cancer Dressing Station; held card party with proceeds to Cancer Society. LENNOXVILLE: Radio broadcast given by Mrs. S. Parker on Sir Alexander Galt, his home in Sherbrooke, which is to be an historical site, and his contributions to the Eastern Townships; each member brought guest to meeting; held contest on anything made from 1 yard of material, or one ounce of wool; report of Quarterly County meeting; 2 members named to Parks Commission to study Centennial projects in town of Lennoxville; articles read on Good Shopping, How to Entertain Sick Child, Water Hyacinth A Menace; Canadian Souvenirs-Trash. MILBY showed photos of recent Button contest — there were 1,152 buttons in one collection, with Mrs. A. Fairbrother possessing the largest number; Ice-box cookie contest held with prizes given; Mrs R. Suitor demonstrated teaching arithmetic by Cuisinaire method; auctioned mystery parcels; donated money to local skating rink; "WI Meetings in England" by M. Dickens was read.

STANSTEAD: BEEBE sent Valentines to Shut-Ins. HATLEY CENTRE donated to Cancer and to Red Cross; plan a poster contest for school children, with Confederation the theme.

TWO MOUNTAINS: OKA held a Children's Party with 150 invited, in Community Hall, with gifts, candies and fruit for each little guest.

FROM THE OFFICE

The native women of Fort McPherson W.I. (Northwest Territories) are making afghans of knitted squares. Any members wishing to help out with odd bits of wool send to:

Mrs. M. G. Wiggins, Fort Providence, N.W.T.

As postage is high, make it into small parcels.

SOUVENIR OF IRELAND

I think every Irish Countrywoman made some article to place on the handicraft tables during the ACWW Conference, for each day new articles arrived to replenish the many and varied arts and crafts displayed and sold to help defray the terrific expense of such a conference.

One treasure I purchased was a book of traditional and modern Irish cookery, specially compiled for the conference. In the older days much of the cooking was done on the hearth over the fire in a cast iron pot with three legs (known as a skillet), or the more shallow one called bastable. Hence the saying, "As handy as a skillet around the house". Now with the electrification of the rural areas, many fireplaces are being closed. Country housewives can now enjoy the same cooking amenities as their urban counterparts.

During my stay in Ireland I especially enjoyed the many kinds of breads — especially the Brown Soda Bread, which was nearly always included with a continental breakfast. Many recipes call for buttermilk. To make your own buttermilk my Irish Cookery book says: "Cream 1 oz. yeast with 1 oz. sugar. Place in a vessel with one quart tepid water and milk. Cover well and leave in room temperature for 48 hours — until it tastes and smells like buttermilk. Strain and keep residue to cover again with milk and water for an endless supply of buttermilk. To preserve plant, which will grow and grow, always rinse well, when strained, with water and place in scalded vessel each time. Strain off at least every five days."

Potatoes were and are used in conjunction with flour to make cakes and pastry. Boxty, a combination of raw and cooked potatoes, is a very popular dish. There have been many poems written about Boxty. One of the best known is :-

Boxty on the griddle,
Boxty on the pan,
If you don't eat boxty,
You'll never get a man.

Potatoes were introduced to Ireland by Sir Walter Raleigh in 1587. The Irish climate suited the vegetable and during the ensuing years it became the staple diet of the people. There were occasional failures of the crop. By far the most serious failure occurred in the years 1845-1849, now known as the famine years. It will never be known exactly how many died in the famine. It is thought about one million emigrated and about a million and a half died of hunger and fever. Emigration is still a problem in Ireland. In former days starch and flour were made from potatoes. Today, in Ireland, there are factories which make industrial alcohol from potatoes.

Yes, in my souvenir cookbook (which alas, is now out of print), are recipes for everything from Nettle Purée to Home Made Brandy.

Ethel M. McGibbon
(Mrs. Geo. McGibbon)
QWI 1st Vice-President

THE TASTES OF AMINO ACIDS

As a result of statistical tasting tests, it appears that the concentration of free amino acids in foods can contribute greatly to their flavour, although this connection has received very little attention in the past. At the Nestlé research laboratories, Vevey, Switzerland, a thorough study has now been made of the tastes of 18 different amino acids.

Free amino acids are present in varying amounts in food products, depending markedly on methods of processing and preparation. Surprisingly, since an observation in 1886 that the D and L stereo-isomers of an amino acid (two forms differing only geometrically) may differ in flavour, very little work has been done in this field, except on monosodium glutamate, which is very widely used as a flavouring agent in processed foods.

J. Solms, L. Vuataz and F. H. Egli, at the Nestlé laboratories now find that the amino acids can be divided into three groups. Both the D and L forms of the eight amino acids in the group are virtually tasteless. The second group consists of three amino acids (cysteine, methionine and glutamic acid) having unique flavours. The meaty, sulphurous flavour of the first two seems probably due to their breakdown products. The L-form of glutamic acid exhibits the unique glutamate flavour, while the D-form is tasteless.

The seven amino acids comprising the third group present an interesting picture. In general, the D-forms are sweet and the L-forms bitter. The aromatic amino acids in this group (that is, those containing benzene rings, namely tryptophan, phenylalanine and tyrosine) have a very high intensity of taste compared with sucrose and caffeine (which were used as standards for sweet and bitter flavours respectively). Of these tryptophan had the highest intensity, with L-tryptophan half as bitter as caffeine, and D-tryptophan 35 times as sweet as sucrose.

In highly industrialized countries the amount of processed food consumed increases annually. Although the science of tastes and flavours is still in its infancy this study should prove valuable to all those interested in the effects of storage and processing on the flavour of foods. *(Experientia,* Vol. 21, p. 692).

REPORT ON CIDER PLANT

Mr. Jean Lesage has indicated that a public hearing on Quebec's long-promised cider plant will be staged by the House Committee on Agriculture.

He made the announcement as he tabled a voluminous feasibility study by a Montreal firm of consulting engineers indicating that a cider plant could have only a supporting role in efforts to give the apple industry a shot in the arm.

Nevertheless, the report did suggest establishment of a $2,650,000 plant in the Laprairie basin south of Montreal.

Owned by the apple producers themselves and an unspecified investment corporation, it should manufacture 500,000 bushels a year in cider, apple juice and apple sauce operations starting in 1969.

It could be both a profitable investment — yielding about 6 per cent on the capital involved — and an "instrument in improving the culture of apples," the report said.

But the study also warned that with 70 percent of the province's harvest aimed at the market for fresh apples, "the development of a manufacturing industry can serve only to back up general measures for improving the situation."

The study proposed establishment of an "apple exchange" to help stabilize the market, rigorous classification of the apple crop, a search for new manufactured products like apple concentrates and other measures of a general nature.

The report has apparently come as a serious blow to the thinking of the government on the problems of the apple industry.

Establishment of a cider plant has been regarded in many quarters, and among some farmers, as a panacea and a great deal of pressure has been put on the government to proceed with one.

The study found that Quebec is generally a net importer of apples, not a surplus producer, and that existing manufacturing facilities can take the crop until 1970.

In addition, the proposed plant could operate only a few weeks each year during the apple harvest so that unless some other products were found, the investment and the skilled labor needed would lie idle most of the time.

INCREASED LYSINE IN CORN PROTEIN?

One of the big snags with corn for feeding in any quantity has always been its poor balance of amino acids, in particular its comparatively low level of lysine, so that it has been unsuitable as the sole source of protein in animal rations. Now a discovery at Purdue University in the United States suggests that the lysine content of maize may be doubled by a mutant gene called opaque-2.

This gene is responsible for radical changes in the protein composition and pattern of amino acids in maize. It is confidently expected that the high lysine factor can be bred into commercial vaireties of corn and, within five or six years, we may be in sight of maize with a much better protein quality.

(From "New Scientist")

WINTER INCREASE IN SEED GRAMS

Last winter an increase block in a growth room yielded 197 grams of seed. From this, enough seedlings were grown to plant nearly ½-acre, to provide additional seed for experimental purposes.

Small samples were sent to birdsfoot trefoil breeders across Canada, and further comparative tests were established at Nappan.

(From "Research for Farmers", Fall 1965)

— NEW FILMS —

THE CHILD OF THE FUTURE HOW MIGHT HE LEARN

Education is being increasingly affected by the vast technical advances of this century. How it is changing and how the changes affect the child are shown in this far-ranging study of what is new in educational theory and practice.

The film examines some of the ways in which technology is being used in the classroom. It shows how schools and colleges are shedding their traditional apathy to machines and are now exploiting all manner of mechanical and electronic aids.

Most important is the opportunity that the film provides to observe the child's actual encounter with these new devices and to draw conclusions as to their effect on the learning process.

The host and narrator is Dr. Marshall McLuhan, head of the Centre for Culture and Technology at the University of Toronto, and author of "Understanding Media".

Also appearing with other leading educators and innovators is Dr. Jerome Bruner of Harvard University, author of the widely read "The Process of Education".

For all adults who wish to ponder the classroom of the future, this film should provide a provocative beginning.

This film may be borrowed from the Extension Film Library, Macdonald College, for the nominal service charge of $2.00, plus transportation costs. It is 16mm. sound, black & white, and runs for 58 minutes. Productiion is by the National Film Board.

— *Iris Robbins*

AUTOMATION REACHES LIGHT TRAPS — An automatic device for segregating light trap insect catches at pre-determined time intervals has been designed at the CDA Research Station, St. Jean, Que.

The design is such that this device can operate beneath various types of light trap, and collect the material dry or in fluid. The prototype was tested extensively during the summer of 1964 for a special study of nocturnal flight activity of Trichoptera. A Robin Moth trap bulb and entry cone were used and the insects were collected in alcohol. The timing apparatus functioned reliably during all-night catches, and thus demonstrated its usefulness for studies of this kind.

How much does it cost you to feed your calves milk?

How much extra money could you make if you sold *all* of your milk?

Figure it up. Then see your Purina dealer and let him tell you how much you can save by feeding Purina Nursing Chow.

Just 25 pounds of Nursing Chow replaces 250 pounds of milk.

Purina Nursing Chow is an easy-mixing milk product high in energy, fortified with vitamins and minerals plus a powerful antibiotic to guard against scours. And it stays in suspension—won't settle out.

Purina Calf Startena—a companion product to Nursing Chow is highly palatable and helps calves gain fast. In fact, Holstein calves fed this dry ration according to the Purina program have averaged 320 pounds at 4 months of age.

Decide now to sell **all** your milk. Raise calves on Purina Nursing Chow and Purina Calf Startena — the team that's research-tested for fast, economical gains. Your Purina dealer will be glad to outline Purina's calf program for you. See him today!

RALSTON PURINA OF CANADA LTD.

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DAIRY FACTS

by Dr. J. P. Everett,
Manager, Purina Dairy Research.

A recent University of Kentucky study disproves the old tale that a calf must be taught to eat a dry calf starter.

In the university's trial, calves which had no coaching performed just as well as calves which had dry starter placed in their mouths twice daily.

We have noted similar results in experiments with Calf Startena at our Gray Summit, Mo., Research Farm. We've found that you don't have to teach calves to eat calf starter if you:

1. Feed a high-quality palatable ration (Purina's is).
2. Offer it in small amounts initially to insure fresh feed, feeding what's left over to older heifers.
3. Decrease the amount of Nursing Chow fed in the fourth and fifth weeks, before Nursing Chow feeding is terminated.

Limit Period of Feeding Nursing Chow

Surprisingly, surveys show that many dairymen feed a milk replacer until calves are six to eight weeks old. Although calves undoubtedly enjoy this, it's not the most economical way to feed them. Based on our studies, we recommend feeding Purina Nursing Chow for only four weeks to calves that weighed over 80 pounds at birth and five weeks to calves that weighed under 80 pounds at birth.

Holstein heifers at Purina's Research Farm average 320 pounds at four months. This shows that extended milk replacer feeding is not necessary.

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